Math 211 Statistics

Credit Hours:  3

Scheduled hours per week
   Lecture: 3  
   Lab: 0  
   Other: 0

Catalog Course Description: Descriptive and inferential statistics, descriptive measures, probability, random variables, discrete and continuous probability distributions, expected value, Central Limit Theorem, confidence intervals, tests of hypothesis, chisquare test, regression and correlation.

Pre-requisites: None

Co-requisites: None

Course Learning Outcomes:

   A. Students will interpret and apply basic concepts of descriptive statistics
   B. Students will apply probability concepts including Addition Rule, Multiplication Rule and Counting Techniques
   C. Students will calculate the mean and standard deviation for discrete Random Variables, including Binomial Distribution
   D. Students will solve application problems dealing with Normally Distributive data
   E. Students will apply the Central Limit Theorem
   F. Students will calculate Confidence Intervals used to estimate population means
   G. Students will apply basic concepts of inferential statistics

Topics to be studied:
Descriptive statistics including:
   measures of center,
   measures of variation,
histograms, boxplots
Probability concepts including:
   Addition Rule,
   Multiplication Rule and
   Counting Techniques
Random Variables
Binomial Probability Distributions
Standard Normal Distributions and their Applications
Central Limit Theorem
Confidence Intervals
Hypothesis Testing
Regression and Correlation (optional)
Relationship of Course to Program or Discipline Learning Outcomes:
(What program outcomes are being met by this course?
For general education courses, a listing of the general education competencies that are met.)

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<tr>
<th>Relationship of Course to Mathematics (MATH) Student Learning Outcomes:</th>
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<tr>
<td>Demonstrated understanding of the language of mathematics, by their use of symbols, definitions, word phrases, and representations.</td>
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<td>Display proficiency in mathematical computations.</td>
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<td>Implement mathematical techniques to solve applied problems.</td>
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<td>Employ appropriate technology to demonstrate knowledge of mathematical concepts.</td>
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<td>Exhibit mastery of core course competencies.</td>
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10/20/2017

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<th>Relationship of Course to General Education Learning Outcomes:</th>
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<tr>
<td>Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.</td>
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<td>Science &amp; Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.</td>
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<td>Mathematics &amp; Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.</td>
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<td>Society, Diversity, &amp; Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.</td>
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<td>Human Inquiry &amp; the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.</td>
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<td>The Arts &amp; Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.</td>
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Special requirements of the course: Weekly Lab assignments which apply the concepts learned in lecture.

Additional information: None

Prepared by: Thomas Riddle

Date: 10/20/2017